Estimated Costs of Environmentally Related Childhood Illnesses in NH

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FACTS in NH

• N.H. Ranked 2nd For Child Well-Being in the U.S. by 2015 Kids Count data.

However....

• NH has high children asthma rate: 10.6 % in 2013 among the highest in the U.S.

• NH childhood cancer incidence rate is significantly higher than the rest of the nation in the years 2008-12

  NH: 196.6 (171.5 - 224.3) V.S. 165.0 (163.5 - 166.4)

• 61% of the children who were at highest risk of lead poisoning did not receive the recommended test for lead in 2013.
Childhood Asthma in NH

- 28,000 NH children, 10.6%, have asthma in 2013
- 34% of children with current asthma had NOT well-controlled asthma (2006-2008)
- 0 to 4 years olds had the highest discharge rates (17.3 per 10,000 inpatient; 82.2 per 10,000 ED/OBS)
**Childhood Asthma in NH**

Common environmental asthma triggers outdoor

- Pollens and Air pollutants: \(O_3\), \(PM_{2.5}\), NO and \(SO_2\)
- NH tends to have higher air pollution levels late spring through the summer
- Wood fireplace or stove use has a major impact on winter outdoor/indoor \(PM_{2.5}\) pollution in NH

*Only outdoor, nonbiologic pollutants from sources potentially amenable to abatement, such as vehicular exhaust and emissions from stationary sources, were considered.*

**Environmentally Attributable Fraction (EAF)**

**Asthma**

30% (10-35%)

Source: Landrigan et al. 2002
Childhood Asthma in NH

- Health/medical care cost: $951 for each asthma case
- Missed school days lost: $167 for parental earnings due to missed school

* No costs of premature deaths available in NH

Source:
CDC Chronic Disease Cost Calculator V2.
The Impact of the Environment on Childhood Asthma in NH

Reducing environmental hazards (EAF= 30%) would....

- Reduce asthma among 8,600 children every year
- Save $9 million annually in direct and indirect costs
Actions to Minimize Children's Asthma

- Improve understanding of environmental risks and their impact on childhood asthma and its cost burden.
- Promote the Air Quality Index (AQI) as a reference to air pollution and asthma.
- Issue alerts based on NH DES current and forecast air quality information.
- Promote NH Anti-Idling Initiatives and regulate emissions from heavy-duty diesel trucks and buses.
- Encourage to switch out an older woodstove for a new EPA certified kind.
Reducing environmental hazards (EAF= 5%) would:

- Reduce cancer among 2 children every year
- Save $0.7 million in annual and lifetime costs
Lead Exposure in NH

The Impact of the Environment on Childhood Lead Poisoning in NH

Reducing environmental hazards (EAF=100%) would....

- Save **$240 million** over the lifetime of all children born within a single year.
<table>
<thead>
<tr>
<th>Condition</th>
<th>Estimated annual costs – in 2013$ (million)</th>
<th>Estimated lifetime costs – in 2013$ (million)</th>
<th>Estimated total cost of environmentally attributable illnesses – in 2013$ (million)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asthma</td>
<td>$9.0</td>
<td>N/A</td>
<td>$9.0</td>
</tr>
<tr>
<td>Cancer</td>
<td>$0.34</td>
<td>$0.4</td>
<td>$0.74</td>
</tr>
<tr>
<td>Lead Exposure</td>
<td>N/A</td>
<td>$240.4</td>
<td>$240.4</td>
</tr>
<tr>
<td>TOTAL</td>
<td>$9.34</td>
<td>$240.8</td>
<td>$250.1</td>
</tr>
</tbody>
</table>
$250,000,000 — Estimated Costs of Environmentally Related Childhood Diseases in NH in 2013

- $9.00 of the 2009 total NH health expenditures for all residents, and
- $0.34 of the 2014 NH GDP.

### Estimated annual costs

- Asthma: $9.00
- Cancer: $0.34
- Lead Exposure: $0
Lessons Learned

The economic costs of environmental childhood diseases are substantial.

The EAF model provides a method for identifying the combinations of contaminants and exposure pathways with the most substantial public health impacts, especially in children.
Thank you

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